

Preliminary Classification:

Proposed Class:

Subclass:

NOTE: "All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example 'Proposed Class 2, subclass 129.'" M.P.E.P. § 601, 7th ed.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): Outi AHO

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(f) is filed supplying or changing the name or names of the inventor or inventors."

For (title): A METHOD FOR IMPLEMENTING A MULTIMEDIA MESSAGING SERVICE, A MULTIMEDIA MESSAGING SYSTEM, A SERVER OF A MULTIMEDIA MESSAGING SYSTEM AND A MULTIMEDIA TERMINAL

CERTIFICATION UNDER 37 C.F.R. § 1.10*

(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date 6 November 2000, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EL627419937US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Deborah J. Clark

(type or print name of person mailing paper)



Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

*WARNING: Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(New Application Transmittal [4-1]—page 1 of 11)

1. Type of Application

This new application is for a(n)

(check one applicable item below)

- ☒ Original (nonprovisional)
☐ Design
☐ Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED and a NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION.

- ☐ Divisional.
☐ Continuation.
☐ Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

- (i) An International application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or
- (ii) Complete as set forth in § 1.51(b); or
- (iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or
- (iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

(New Application Transmittal [4-1]—page 2 of 11)

WARNING: When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

- ☐ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

- A.** Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

22 Pages of specification

10 Pages of claims

5 Sheets of drawing

WARNING: *DO NOT* submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 C.F.R. § 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

NOTE: "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . ." 37 C.F.R. § 1.84(c).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. § 1.84(b).

☐ formal

☐ informal

B. Other Papers Enclosed

6 Pages of declaration and power of attorney

1 Pages of abstract

 Other

4. Additional papers enclosed

- ☐ Amendment to claims

☐ Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)

☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)

☒ Preliminary Amendment

☒ Information Disclosure Statement (37 C.F.R. § 1.98)

☐ Form PTO-1449 (PTO/SB/08A and 08B)

☐ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

5. Declaration or oath (including power of attorney)

NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).

NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).

☒ Enclosed

Executed by

(check all applicable boxes)

☒ Inventor(s).

☐ legal representative of inventor(s).
37 C.F.R. §§ 1.42 or 1.43.

☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.

☐ This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. See item 13 below for fee.

☐ Not Enclosed.

NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

☐ Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

☐ Showing that the filing is authorized.
(not required unless called into question. 37 C.F.R. § 1.41(d))

(New Application Transmittal [4-1]—page 4 of 11)

009077 047 20260

6. Inventorship Statement

WARNING: If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☐ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

☐ is submitted.

☐ will be submitted.

7. Language

NOTE: An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).

☒ English

☐ Non-English

☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

8. Assignment

☒ An assignment of the invention to Nokia Mobile Phones Ltd.

☒ is attached. A separate ☒ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

NOTE: "If an assignment is submitted with a new application, send two separate letters—one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

WARNING: A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

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00907440 149600

9. Certified Copy

Certified copy(les) of application(s)

Country	Appln. No.	Filed
Finland	19992401	5 November 1999
Country	Appln. No.	Filed
Finland	19992775	23 December 1999
Country	Appln. No.	Filed

from which priority is claimed

☐ Is (are) attached.☒ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete Item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)A. ☒ Regular application

CLAIMS AS FILED					
Number filed	Number Extra		Rate	Basic Fee 37 C.F.R. § 1.16(a) \$ 710.00	
Total Claims (37 C.F.R. § 1.16(c))	52	- 20 =	32	×	\$ 18.00
Independent Claims (37 C.F.R. § 1.16(b))	4	- 3 =	1	×	\$ 80.00
Multiple dependent claim(s), if any (37 C.F.R. § 1.16(d))			+	\$ 270.00	

☐ Amendment cancelling extra claims is enclosed.☒ Amendment deleting multiple-dependencies is enclosed.☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation \$ 1,366.00

B. ☐ Design application

(\$ 320.00 - 37 C.F.R. § 1.16(f))

Filing Fee Calculation \$

C. ☐ Plant application

(\$ 490.00 - 37 C.F.R. § 1.16(g))

Filing fee calculation \$

11. Small Entity Statement(s)

- ☐ Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

WARNING: "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

WARNING: "Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application
_____ / _____, filed on _____, from which benefit
is being claimed for this application under:

35 U.S.C. § ☐ 119(e),
☐ 120,
☐ 121,
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ _____

NOTE: Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136, 37 C.F.R. § 1.28(a).

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.
(This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

☒ Enclosed

☒ Filing fee \$ 1,366.00

☒ Recording assignment
(\$40.00; 37 C.F.R. § 1.21(h))
(See attached "COVER SHEET FOR
ASSIGNMENT ACCOMPANYING NEW
APPLICATION".) \$ 40.00

☐ Petition fee for filing by other than all the
inventors or person on behalf of the inventor
where inventor refused to sign or cannot be
reached
(\$130.00; 37 C.F.R. §§ 1.47 and 1.17(l)) \$

☐ For processing an application with a
specification in
a non-English language
(\$130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k)) \$

☐ Processing and retention fee
(\$130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l)) \$

☐ Fee for international-type search report
(\$40.00; 37 C.F.R. § 1.21(e)) \$

NOTE: 37 C.F.R. § 1.21(l) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(l) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed \$ 1,406.00

14. Method of Payment of Fees

☒ Check in the amount of \$ 1,406.00

☐ Charge Account No. _____ in the amount of
\$ _____

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should not be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. 16-1350.

☒ 37 C.F.R. § 1.16(a), (f) or (g) (filing fees)

☒ 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

☒ 37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☒ 37 C.F.R. § 1.17(a)(1)-(5) (extension fees pursuant to § 1.136(a)).

☒ 37 C.F.R. § 1.17 (application processing fees)

NOTE: ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

☐ 37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

(New Application Transmittal [4-1]—page 9 of 11)

JC944 U.S. PTO

09/707140



11/06/00

005011 09/707140

16. Instructions as to Overpayment

NOTE: "... Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

- ☒ Credit Account No. 16-1350
☐ Refund



SEND ALL CORRESPONDENCE TO:
Clarence A. Green, Reg. No.: 24,622
PERMAN & GREEN, LLP
425 Post Road
Fairfield, Connecticut 06430

Reg. No. 24,622

Tel. No. (203) 259-1800

Customer No. 2512

SIGNATURE OF PRACTITIONER

Clarence A. Green

(type or print name of attorney)

PERMAN & GREEN, LLP

P.O. Address

425 Post Road, Fairfield, Connecticut 06430

☐ **Incorporation by reference of added pages**

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

- ☐ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added _____

- ☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added _____

- ☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added _____

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added _____

☒ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

- ☒ This transmittal ends with this page.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Express Mail No.:EL627419937US

In re Application of: Outi AHO

FILING DATE: Herewith

ART UNIT:

TITLE: A Method For Implementing A Multimedia Messaging Service, A
Multimedia Messaging System, A Server Of A Multimedia Messaging System
And A Multimedia Terminal

ATTORNEY DOCKET NO.: 460-009944-US(PAR)

The Commissioner of Patents and Trademarks
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the above-identified, enclosed patent application as follows:

IN THE CLAIMS:

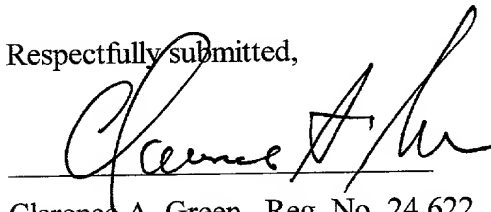
Please amend Claim 48 as shown below.

Claim 48, line 1, delete "to 47".

Remarks

Please enter this preliminary amendment, prior to calculation of the fees.

Respectfully submitted,



Clarence A. Green, Reg. No. 24,622
Perman & Green, LLP
425 Post Road
Fairfield, CT 06430
(203) 259-1800
Customer No.: 2512



Date

009944-0012060

A method for implementing a multimedia messaging service, a multimedia messaging system, a server of a multimedia messaging system and a multimedia terminal.

- 5 The present invention relates to a method according to the preamble of the appended claim 1 for implementing a multimedia messaging service. The invention also relates to a system for multimedia messaging according to the preamble of the appended claim 19. Moreover, the invention relates to a server of a multimedia messaging
- 10 system according to the preamble of the appended claim 35. The invention also relates to a wireless terminal according to the preamble of the appended claim 43.

- 15 Wireless communication networks and the Internet network are expanding rapidly and the number of users of these networks is growing. It is possible to introduce advanced Internet services in digital mobile stations of wireless communications networks, such as so-called media phones, for example by means of WAP technology. WAP is an open standard, which is designed to globally support most digital
- 20 wireless communication networks, such as GSM (Global System for Mobile Communications) GPRS (General Packet Radio Service), PDC (Personal Digital Cellular), CDMA IS-95 (Code Division Multiple Access), TDMA IS-136 (Time Division Multiple Access), and third generation networks such as WCDMA (Wideband CDMA) and CDMA-
- 25 2000. Because the WAP system has been developed only recently, and because the specifications of the WAP system in some cases merely determine the framework for different implementations, there are no known solutions for implementing particular functions of the WAP system.

- 30 In a WAP system (Fig. 1) the terminal, or a wireless terminal MS, here a so-called WAP terminal, which utilizes the WAP protocol for external communication, can communicate with a server 20 of the Internet network. The connection between the WAP terminal and the Internet network is
- 35 implemented by a WAP gateway 15 which functions as a means for transmitting messages between the WAP terminal MS and the Internet network 18. When necessary, the WAP gateway 15 transforms messages directed to the Internet network by the WAP terminal MS into messages

according to an Internet protocol, such as TCP/IP protocol (Transmission Control Protocol/Internet Protocol). Correspondingly, messages addressed to the WAP terminal MS in the wireless network 12 from the Internet network 18 are transformed, when necessary, into messages according to a WAP protocol (for example WSP, Wireless Session Protocol) in the WAP gateway.

As such, the WAP terminal MS can be any device which utilizes WAP protocols for external communication, such as a mobile station of a cellular network, or a computer terminal connected to the wireless network 12 for example via a mobile station of a cellular network or via a radio card removably attached to the computer terminal, for example via an interface compatible with PCMCIA (Personal Computer Memory Card International Association) standards.

Communication modes supported by the WAP and intended for transmission of information over the radio path are called bearers. These include, for example, short messages (SMS, Short Message Service), data calls (CSD, Circuit Switched Data) and packet radio i.e. GPRS services, USSD service (Unstructured Supplementary Service Data) as well as other bearers defined in the WAP specifications.

The WAP system is a hierarchical system as far as its communication protocols are concerned. Both the WAP terminal and the WAP gateway comprise a WAP protocol stack which is implemented by means of software and which comprises certain WAP protocol layers. The WAP protocol layers include, for example, a WAE layer (Wireless Application Environment), a WSP layer (Wireless Session Protocol), a WTP layer (Wireless Transaction Protocol), as well as a WDP layer (Wireless Datagram Protocol). Corresponding WAP protocol layers of the WAP terminal and the WAP gateway communicate with each other to provide reliable data transmission between the WAP terminal and the WAP gateway using a particular bearer.

For a long time, users of a computer terminal connected to the Internet network have had an opportunity to retrieve multimedia components, such as images, text, short video clips and audio clips in electronic format into their computer terminal from a server of the Internet network. As data transmission rates increase and the properties of

mobile stations improve, interest in a multimedia messaging service has also arisen in wireless networks. However, for example in connection with the WAP system, a solution has not yet been presented for implementing a multimedia messaging service.

5

International patent application WO 98/19438 discloses a solution for implementing a multimedia messaging service in a telecommunication network. The multimedia messaging system disclosed in document WO 98/19438 comprises a multimedia message store, in which a multimedia message addressed to a specific user is stored. The user is given the opportunity to communicate the multimedia properties of his/her terminal to the multimedia messaging system, which translates said multimedia message either partly or entirely, taking into account the properties of the user's terminal. Thereafter, the multimedia messaging system transmits the multimedia message to the user's terminal. In the arrangement presented in document WO 98/19438, information on the properties of the user's terminal is transmitted to the multimedia messaging system at the stage when the user's terminal is informed of an incoming message, wherein the terminal and the multimedia messaging system conduct connection set-up signalling (dynamic dialogue) to set up a connection to transfer the multimedia components of the multimedia message. However, the properties of the user's terminal do not necessarily change, wherein the transmission of properties in connection with establishment of every connection causes unnecessary loading of the data network, such as the mobile communication network used for the transmission of the multimedia message.

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When the multimedia messaging service is implemented in connection with wireless communication systems, new problems arise due to the limited capacity of the wireless terminal and the radio path. For example, the mobile terminal may have limitations in terms of its processing power and / or available memory, while the wireless communication network may have limited transmission bandwidth.

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For third generation mobile communication networks, such as WCDMA, a multimedia messaging service has been proposed, which would be implemented in a similar manner to the short message service, i.e.

substantially by pushing messages addressed to a wireless terminal and stored in a particular message service centre to the wireless terminal as soon as it can be reached. However, problems arise when multimedia messages are transmitted to the wireless terminal. Because
5 of the limited storage capacity of the wireless terminal, such as a mobile station of a cellular network, the multimedia message will not necessarily fit into the available memory of the mobile station. A multimedia message transmitted to the wireless terminal can also
10 contain elements that cannot be processed by the wireless terminal, possibly because of the terminal's technical limitations (e.g. insufficient processing capacity, lack of video properties, lack of suitable software), wherein radio resources are unnecessarily wasted when said elements are transmitted to the wireless terminal.

15 In a multimedia messaging service under development for third generation mobile networks, it has been suggested that the data transmission conducted between the wireless terminal and the multimedia messaging system, concerning the properties of the wireless terminal is necessary so that in connection with the
20 transmission of multimedia messages it can be ensured that the receiving terminal is capable of receiving and processing the multimedia message, taking into account the user's own special settings when necessary. The transmission of properties can be performed at different layers of the protocol stack, such as the
25 application layer and the link layer.

30 In connection with the process of informing of the properties, the wireless terminal transmits information on the properties of the wireless terminal and the multimedia messaging client used therein to the multimedia messaging system. These properties can be roughly categorized in four different groups: 1) hardware properties, 2) software properties, 3) properties of the multimedia service application (User Agent) and 4) special multimedia message specific properties.

35 Many of the aforementioned properties include properties which do not change and are primarily dependent on the model and version of the terminal. Some of the terminal's properties are dependent, for example, on the application software used in the terminal. A few such properties

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are e.g. software-based decoders supported in the terminal, protocol properties, etc. These properties are comparatively constant, but for example in connection with software updates or when accessories are attached to the wireless terminal, software properties can change. The properties of the multimedia application include, for example, the properties of the MMS User Agent, settings which can be configured by the user, etc. Special multimedia message specific properties are typically only associated with a particular multimedia message, and are conveyed in connection with the transmission of the multimedia message in question.

In the process of developing a multimedia messaging service for the WAP system, it has been suggested that a wireless session (WSP session) shall be established for each multimedia message, wherein when each such session is set up, the properties of the wireless terminal receiving the multimedia message are transmitted from the wireless terminal to a multimedia message service centre. To enable this, a so-called user agent profile (UAProf) has been developed, which contains information on the properties of the wireless terminal (CPI, capability and preference information), such as information on the properties (capability) and the settings (preferences) related to the multimedia functions, made by the user of the wireless terminal in question. As previously mentioned in this description, the properties of the wireless terminal are relatively constant and thus the presented arrangement loads the radio resources unnecessarily.

International patent publication WO 99/56431 presents a method of handling a Wireless Session Protocol (WSP) in which a communication terminal initiates a WAP session by forwarding a request for certain data to a server. The request sent by the communication terminal to the server comprises an identification of the requested data and a terminal identification number previously allocated to the communication terminal by the server. When it receives the request, containing the terminal's identification number, the server retrieves user profile information from an associated database memory. The user profile information indicates a data format that can be handled by the communication terminal and the server subsequently replies to the request by forwarding the requested data to the communication

terminal in the format defined in the stored user profile information. In this way it is not necessary for the communication terminal to provide the server with information about its data handling properties in connection with the establishment of each session.

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It should be noted that the method described in WO 99/56431 operates in such a way that data requested by the receiving terminal is transmitted to the terminal in a format the terminal can handle. This implies, for example, that the server should either store data to be
10 downloaded in a number of different formats or that it is capable of translating data from one format that is not suitable for a given communication terminal into another format that is suitable for the terminal in question. This approach may work well, for example, in a situation where certain content is provided for download from a given
15 server. The data available for download can then be stored in the server, for example in a limited number of commonly used data formats, or translation functionality can be provided to convert the stored data into any one of a number of commonly used alternative formats. However, in a multimedia messaging service, the server that
20 stores multimedia messages (i.e. the multimedia message service centre MMSC) can receive multimedia messages from a very wide variety of sources and the type and format of the multimedia components contained by those messages can also be extremely diverse. In other words, the server has no control over the type or
25 format of the data (multimedia messages) it receives for forwarding. Furthermore, the properties of the terminal(s) intended to receive the multimedia messages may be significantly different. Thus, it is difficult and expensive in terms of computing power and complexity to provide comprehensive data translation functionality capable of matching any
30 possible multimedia component received at the MMSC to the properties of any likely receiving terminal.

It is an aim of the present invention to introduce a method and a system for transmitting multimedia messages, in which unnecessary message
35 transmission can be avoided. The method according to the invention is characterized by that which is presented in the characterizing part of the appended claim 1. A multimedia messaging system according to the present invention is characterized by that which is presented in the

characterizing part of the appended claim 19. A server of a multimedia messaging system according to the present invention is characterized that which is presented in the characterizing part of the appended claim 35. Furthermore, a wireless terminal according to the present invention is characterized by that which is presented in the characterizing part of the appended claim 43.

The invention is based on the idea that information on the properties of the wireless terminal is stored in the multimedia messaging system, advantageously in a multimedia message service centre, whereupon property information does not have to be transmitted in connection with each message. In the method according to a preferred embodiment of the invention, a maximum time of validity is set for the property information, in which case, before transmitting a message to the wireless terminal, the system determines whether the property information is still relevant or whether information on the properties of the wireless terminal should be updated before transmitting the message.

By applying the present invention, considerable advantages are achieved when compared to solutions of prior art. When the method according to the invention is applied, it is possible to reduce data transmission between a wireless terminal and a multimedia messaging system, whereupon the resources of the message transmission system are not unnecessarily wasted and it is possible to increase the system's utilization. Furthermore, by means of the arrangement according to the invention, it is possible to speed up the transmission of multimedia messages because it is not always necessary to determine the properties of the wireless terminal.

In the system according to a preferred embodiment of the invention, it is not necessary at the application level for the wireless terminal to request the multimedia service centre to transmit multimedia message components which can be processed by the wireless terminal. Thus, those components of a multimedia message which the receiving wireless terminal can handle according to the property information of the receiving wireless terminal stored in the multimedia message transmission system, are transmitted to the wireless terminal. By

means of this arrangement it is possible to reduce the data transmission conducted between the wireless terminal and the multimedia messaging system.

- 5 In the following, the invention will be described in more detail with reference to the appended drawings, in which

Fig. 1 shows a prior art model of a WAP system,

- 10 Fig. 2 illustrates the implementation of the method according to the invention in a WAP system,

Fig. 3 illustrates the basic parts of a wireless terminal implementing a method according to the invention,

- 15 Fig. 4 is a block diagram showing the functional blocks of a multimedia message service centre,

- 20 Fig. 5a shows a rudimentary structure of a notification message, and

Fig. 5b shows a rudimentary structure of a connection set-up message.

- 25 The WAP system according to Fig. 1 was presented above in connection with the description of prior art. In a preferred embodiment of the invention, which is illustrated in the appended Fig. 2, a multimedia messaging system is examined in a situation in which a wireless terminal MS which uses the WAP protocol for communication,
- 30 has subscribed to a multimedia messaging service from a multimedia message service centre MMSC. The multimedia message service centre MMSC is a network element, a server, which can be located for example in a cellular network or in the Internet. The multimedia message service centre MMSC functions as a means in the multimedia
- 35 messaging system which stores a multimedia message addressed to a wireless terminal MS in its memory, if the wireless terminal MS to which the multimedia message in question is addressed cannot be reached. The multimedia message service centre MMSC forwards the

multimedia message to the wireless terminal MS when it can be reached again. This situation may arise, for example, if the wireless terminal is turned off, or if it is outside the area of coverage of the wireless telecommunication network. It should be noted that storage of the multimedia message in the server is implicit. In other words, when a multimedia message addressed to a certain terminal is received by the MMSC, that message becomes present in the memory of the MMSC. That memory may be, for example, the MMSC's random access memory (RAM), or it may be some other physical memory means, such as a hard disk drive. Thus, even in a situation in which the terminal to which the message is addressed can be contacted substantially at once, temporary storage of the multimedia message in the MMSC may still be considered to take place. In the event that the server must store the multimedia message for a longer period of time, some limit may be placed on the maximum length of time for which the message can be stored. This can be determined, for example, by the subscription options of the addressed terminal. This message transmission mechanism is called store-and-forward messaging. A corresponding arrangement is known in connection with short messages in the GSM network, in which the short message service centre SMSC of the network conducts the store-and-forward transmission of short messages.

The multimedia message service centre MMSC communicates with the wireless terminal MS via WAP gateway 15. Physically, the multimedia message service centre MMSC is advantageously located in the same part of the Internet network as the WAP gateway 15. Typically, communication between the multimedia message service centre MMSC and the WAP gateway 15 is implemented according to Internet protocols (IP protocols). These include, for example, TCP/IP and HTTP 1.1.

When a multimedia message, which may contain one or more multimedia components and is addressed to a wireless terminal which has subscribed to the multimedia messaging service, arrives at the multimedia message service centre MMSC, the multimedia message service centre MMSC stores the multimedia message in its memory and transmits a notification message 30 to the wireless terminal to

indicate that the multimedia message has been stored. The multimedia components may be, for example, text, images, photographs, audio clips or video clips in electronic format. One multimedia message can also contain other types of multimedia component.

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In an advantageous embodiment of the invention, a content type, which in this context is called a Multimedia Message Indication (MMI), is used to implement the notification message 30. The MMI is a content type that is defined in such a way that it allows the transmission of information in both text and binary format within the same content type. Advantageously, both an Internet compatible XML (Extensible Markup Language) text representation and a binary format according to WAP binary coding are defined for the MMI content type. One possible basic structure of a MMI-type notification message 30 is shown in the appended Fig. 5a, in which the notification message 30 comprises a "general information" section 36, fields 37 (of which there are two in the example of Fig. 5a) for indicating the properties of the multimedia components contained in multimedia messages, as well as a field 38 for a request to update the properties of the wireless terminal MS.

20

To implement the method according to the invention, the multimedia message service centre MMSC, of which the appended Fig. 4 shows a preferred embodiment in a reduced block diagram, is provided with a first data storage 56 (cache) into which it is possible to store information on the properties of a wireless terminal MS. This first data storage 56, which is advantageously formed in a memory area specified in the memory of the multimedia message service centre MMSC, can be either fixed in length or its length can vary in accordance with the demand at a given time. The information on the properties of the wireless terminals MS, stored in the first data storage 56 includes, for example, the hardware properties of the wireless terminal MS, software properties, the properties of the multimedia service application, as well as possible user settings.

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In the following, the operation of the method according to a preferred embodiment of the invention will be described in greater detail with reference to the system shown in Fig. 2. In a situation where the multimedia message service centre MMSC receives a multimedia

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message, the service centre examines the address data of the message to determine to which wireless terminal MS the message in question is addressed. The address information can be e.g. a phone number, an IP address or URL (Uniform Resource Locator). When the terminal intended to receive the message has been determined, the multimedia message service centre MMSC transmits a notification message 30 via the WAP gateway 15 to the wireless terminal MS, reporting that a multimedia message addressed to the wireless terminal MS has arrived at the multimedia message service centre MMSC.

The notification message 30 is advantageously transmitted using a so-called connectionless service supported by WAP. In a connectionless service, such as the short message service (SMS) known from the GSM system, transmission of a message to the receiver does not require a connection to be established. In the transmission of multimedia messages to a wireless terminal MS in accordance with the present invention, a connection oriented service is, however, advantageously used.

The notification message 30 transmitted to the wireless terminal MS by the multimedia message service centre MMSC, contains specific information on the properties of the multimedia message for the purposes of making decisions in the wireless terminal in connection with the retrieval of the multimedia message. Advantageously, said notification message 30 contains information 37 on the size and type of the multimedia message stored in the multimedia message service centre MMSC, or the size and type of the components it comprises. Said type is indicated in the notification message 30 either using MIME types in text format (e.g. image/jpeg, text/plain, video/mpeg, audio/wav) or in corresponding binary equivalents defined in WAP. Furthermore, the notification message 30 can contain information on the importance of the multimedia message, i.e. a so-called priority value. Typically, the notification message 30 contains information on the sender of the multimedia message as well as the URL or URI (Uniform Resource Indicator) of the multimedia message, or some other identifier for identification of the multimedia message. If the multimedia message comprises more than one multimedia component, the notification message 30 can also comprise an identifier as well as the other said

information (type, size, address information, video format, audio format, etc.) separately for each multimedia component of the multimedia message. When necessary, the multimedia message 30 also comprises a request to update the property information 38 of the wireless terminal stored in the MMSC.

The property information of the wireless terminal MS, stored in the multimedia message service centre MMSC, is advantageously valid for a certain period of time. Thus, when a multimedia message arrives at the multimedia message service centre MMSC to be forwarded to a wireless terminal MS, the MMSC advantageously examines, preferably before the notification message 30 is transmitted, whether information on the properties of the wireless terminal MS in question has been stored in the memory of the multimedia message service centre MMSC. If property information is stored, the MMSC also examines whether the property information is still valid. This can be performed, for example, in such a way that the MMSC supplements the property information with information on the time at which the information was stored (time label). In addition, a maximum time of validity is defined for the property information. The multimedia message service centre MMSC compares the time label in the property information of the wireless terminal MS in question with the maximum time of validity. If the comparison shows that the time of validity has not expired, it is not necessary to request property information to be transmitted. If, however, the comparison shows that the property information is too old (although the properties may not have necessarily changed at all), the multimedia message service centre MMSC requests the wireless terminal MS to update the information on its properties.

In a preferred embodiment of the invention, the multimedia message service centre MMSC deletes outdated information from the first data storage 56, and thus it is not possible to find the property information of the wireless terminal MS in question stored therein. The deletion of property information can also result from the fact that the storage capacity allocated for property information has become full, wherein preferably the oldest information is deleted. In this embodiment, the wireless terminal MS transmits property information when the

multimedia message service centre MMSC has requested it, even if the properties have not changed at all.

5 In another preferred embodiment of the invention, the multimedia message service centre MMSC does not necessarily delete property information whose time label indicates that it has expired. Thus, new information is written over the expired information when the multimedia message service centre MMSC has received the information from the wireless terminal MS. If the wireless terminal MS does not transmit
10 property information, even though the multimedia message service centre MMSC has requested it, the MMSC assumes that the information related to the wireless terminal in question is still valid. Thus, the multimedia message service centre MMSC sets a new time label for the property information preferably at the stage when the
15 wireless terminal MS transmits a connection set-up message 40, which will be described in more detail later in this description. In this embodiment, it is therefore possible to reduce message transmission even further, especially in situations in which the properties have not actually changed, even if the time label indicates that the information
20 has expired.

Which of the above-described embodiments is implemented in the multimedia message service centre MMSC can be indicated to the wireless terminal MS, for example, in such a way that two different
25 requests to update the wireless terminal property information are used in the notification message 30.

30 If the multimedia message service centre MMSC contains stored information on the properties of the wireless terminal MS in question and if the property information is still valid, this can be utilized when notifying the wireless terminal of a multimedia message and when transmitting the multimedia message to the wireless terminal MS. In this situation, it is not necessary to update the property information, and thus the multimedia message service centre MMSC sets a value
35 corresponding to a no-update request, for example the binary value 0, in field 38 of the notification message. If, however, information on the properties of the wireless terminal MS in question is not currently stored in the memory of the multimedia message service centre MMSC, or the

information is not valid, the MMSC requests the wireless terminal MS to transmit information to the multimedia message service centre MMSC by setting a value corresponding to an update request, for example the binary value 1 in field 38. If it is desired that the wireless terminal MS should transmit property information only if it has changed, the value 2, for example, is placed in field 38. It is obvious that other methods for the transmission of a property update request to the wireless terminal MS can also be adopted.

- 10 On receiving said notification message 30, the wireless terminal MS first initiates formation of a connection with the multimedia message service centre MMSC (WAP WSP CONNECT), if there is no connection between the wireless terminal MS and the MMSC at that time. Typically, connection set-up is conducted in such a way that the
- 15 wireless terminal MS opens a WSP session with the WAP gateway 15 in a manner known as such from WAP, and the WAP gateway 15, in turn, opens for example an IP connection with the multimedia message service centre MMSC. Information on the bearer selected by the wireless terminal MS to be used in the WSP session to be opened is
- 20 transmitted from the wireless terminal MS to the WAP gateway 15 in a WSP HEADER field as a Bearer indication value, in a manner known as such from WAP. The transmission of said information takes place during the negotiation phase between the wireless terminal MS and the WAP gateway 15 when the WSP session is opened, for example in a
- 25 connection set-up message 40 (Fig. 5b). If an update request is set in the field 38 in the notification message 30, the wireless terminal MS adds information on the properties of the wireless terminal MS to the connection set-up message 40. A Uaprof information message in accordance with WAP specifications can be used, for example, as
- 30 connection set-up message 40. This information is attached for example in a header field 41 of the connection set-up message, such as a profile header field or a profile-diff header field, as defined in the Uaprof specification of WAP. Thus, the multimedia message service centre MMSC can determine on the basis of the message header field
- 35 that the message contains information on the properties of the terminal. In some applications, it may be necessary to add explicit information to the connection set-up message indicating that the message contains property information of the terminal.

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Information 42 necessary for establishing a session is transmitted in the connection set-up message 40. The multimedia message service centre MMSC receives the connection set-up message 40 and if it
5 detects that information on the properties of the wireless terminal MS has been transmitted in the message, the MMSC transfers the information on the properties of the wireless terminal MS contained in the message to the first data storage 56. After the connection set-up, the multimedia message service centre MMSC has up-to-date
10 information on the properties of the wireless terminal MS in question in first data storage 56. In addition to this property information, information for identifying the wireless terminal MS is stored in the first data storage 56, whereupon the multimedia message service centre MMSC is capable of determining which property information is related to each
15 wireless terminal. It is possible to use, for example, the international mobile equipment identity IMEI or some other unique identifier as information identifying a wireless terminal MS.

The multimedia message service centre MMSC responds to the
20 connection set-up message with an acknowledgement message, in which the wireless terminal MS is notified whether it is possible to set up a connection. Connection set-up can fail, for example, in a situation where the user of the terminal addressed as a receiver does not have a subscriber contract with the multimedia messaging service, the
25 subscriber connection has been closed due to unpaid bills, etc.

When the connection has been established, it is possible to start the transmission of the multimedia message from the multimedia message service centre MMSC to the wireless terminal MS. In order to optimize
30 radio resources, the wireless terminal MS can select the most appropriate bearer for the transmission of each multimedia component.

In a system according to a preferred embodiment of the invention, the wireless terminal MS makes a decision on the selection of the bearer
35 on the basis of certain information transmitted in said notification message 30. This information typically includes information on the size and type of the multimedia message or the multimedia components it comprises. The selection of a bearer can be made on the basis of just

one of the properties of a multimedia message or multimedia components contained therein. Thus, the selection of a bearer can be made for each multimedia component contained in a multimedia message, for example, just on the basis of the size of the multimedia components. Furthermore, when decisions are made, it is possible to take into account certain user configurable rules, the priority of the multimedia message and certain properties of the wireless terminal MS, such as its free memory capacity as well as its capability to process different types of multimedia component and present them on its display. This processing capability is dependent among other things on the hardware properties of the wireless terminal MS, as well as on the programs installed in the wireless terminal MS. The multimedia message can be retrieved from the multimedia message service centre MMSC for example by means of the GET method specified in WAP. In this method the wireless terminal transmits a GET request in binary format to the WAP gateway 15 to initiate the transmission of multimedia message components. The gateway 15 transforms the GET request 31 into a GET request according to the Internet protocol, for example into a GET request 32, and transmits it to the multimedia message service centre MMSC.

In this system according to a preferred embodiment of the invention, it is not necessary at the application level for the wireless terminal MS to separately request the multimedia message service centre MMSC to transmit those multimedia message components which the wireless terminal MS is able to process. Thus, these components do not have to be identified in the GET request 31, but the multimedia message service centre MMSC selects for transmission those multimedia message components defined in the property information of the receiving wireless terminal MS, stored in the first data storage 56. Thus, in a situation where a multimedia message contains only components which the wireless terminal MS can process, it is not necessary for the GET request 31 to contain information about these components. Correspondingly, in a situation where the multimedia message contains components which the wireless terminal MS is not able to process, the following steps are taken in a system according to a preferred embodiment of the invention. If the wireless terminal MS or its user also decides to receive components which the wireless terminal MS cannot

process directly, the multimedia application of the wireless terminal MS requests those components to be transmitted from the multimedia message service centre MMSC. Thus, these components are identified in said GET request 31. Such an operation can be necessary for
5 example in a situation where the user connects the wireless terminal MS to a computer, such as a portable computer (not shown), which is capable of processing multimedia message components which cannot be processed but merely transmitted e.g. to said portable computer by the wireless terminal MS.

10 If, on the other hand, the user of the wireless terminal MS does not want to receive all components which can be processed by the wireless terminal MS, the user, for example, can change the property information of the wireless terminal MS in a corresponding manner,
15 wherein the property information is transmitted to the multimedia message service centre MMSC, as presented earlier in this description.

The multimedia message service centre MMSC examines the contents
20 of the transformed GET request 32 it receives and initiates the transmission of multimedia message components. The multimedia message service centre MMSC compares the components contained in the multimedia message to be transmitted to the wireless terminal MS with the property information of the wireless terminal MS stored in the
25 first data storage 56 in the multimedia message service centre MMSC. On the basis of the comparison, the multimedia message service centre MMSC selects those components to be transmitted which are supported by the wireless terminal MS in question. In addition, the multimedia message service centre MMSC examines whether the
30 wireless terminal has requested the MMSC to transmit also other possible components of the multimedia message. If this is the case, the MMSC also selects these components to be transmitted to the wireless terminal MS. Thereafter it is possible to start the transmission 33 of the selected components of the multimedia message via the IP connection
35 to the WAP gateway 15, which transmits 34 the component/components to the wireless terminal MS via a bearer selected by the wireless terminal MS for the WSP session in question using either a connection oriented or connectionless service.

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If the multimedia message to be transmitted comprises multimedia components of more than one type, the wireless terminal MS will have typically selected different bearers for the transmission of multimedia components of different types in the manner previously presented. Thus, the multimedia component for whose transmission the wireless terminal MS has selected the bearer which is in use in the WSP session in progress, is transmitted first. A change of bearer can be conducted by placing the WSP session in a Suspend state by means of an S-Suspend primitive and by starting it again by means of an S-Resume primitive. Thus, the bearer used in the WSP session in question can also be changed. In an advantageous embodiment of the present invention each component of the multimedia message selected for transmission is matched, for example, in the MMSC with the bearer(s) selected by the wireless terminal. Thus, a suitable correspondence is achieved between a multimedia component(s) to be transmitted and the bearer(s) used for its transmission.

Using the method according to the invention, it is thus unnecessary to transmit information about the properties of the wireless terminal MS in connection with the transmission of each multimedia message, and thus it is possible to reduce message transmission over the radio path, when compared to methods of prior art.

As was mentioned earlier in this description, it is possible to define either a fixed memory area for the first data storage 56 in the multimedia message service centre MMSC, or the memory area can be expanded when necessary. If a fixed memory area is used, a situation may occur in which the property information of all required wireless communication stations does not fit into the first data storage 56. Let us assume that a multimedia message service centre MMSC receives a multimedia message which is addressed to such a wireless terminal whose property information is not stored in the first data storage 56. In this situation, it is possible to operate, for example, in such a way that the multimedia message service centre MMSC searches the first data storage 56 for property information which has expired. After the MMSC has received the property information from the wireless terminal, the information is recorded over the expired information. If none of the

property information has yet expired, new property information is recorded advantageously over property information whose time label is substantially the oldest.

- 5 It is obvious, that in practical applications, the storage capacity allocated for the first data storage 56 cannot be expanded limitlessly. Thus, the procedures mentioned above in connection with a fixed memory area may also be necessary in connection with an expandable memory area. This situation may be encountered if the popularity of
- 10 WAP communication increases significantly, wherein there may be multimedia messages to be transmitted to a large group of wireless terminals MS.

- 15 Even though it has been stated previously that the wireless terminal MS transmits property information only when the multimedia message service centre MMSC requests it to be transmitted, it is obvious that the wireless terminal MS can also transmit property information even if the multimedia message service centre MMSC does not request it. This may be necessary e.g. in such a situation where the wireless terminal
- 20 MS detects that its properties have changed since the previous transmission of the property information to the multimedia message service centre MMSC. Properties can change, for example, in connection with a software version update or hardware changes. In such a situation property information is also preferably updated in
- 25 connection with a connection set-up message 40.

- The invention can also be implemented without WAP technology, in which case the implementation is dependent on the network in question. For example, communication between an Internet server
- 30 implementing the functionality of a multimedia message service centre MMSC and a wireless terminal MS is possible directly by means of packet switching using IP protocols. The radio path can be traversed using IP protocols, for example, over the packet network GPRS of the GSM network. In this case, the element connecting the wireless
- 35 network and the Internet is a gateway GPRS support node GGSN instead of a WAP gateway. In this case, the selection of a bearer according to the invention can be made between the bearers supported by the GPRS, which include, for example, GPRS-SMS, GPRS data call

and other bearers specified in GPRS. A corresponding solution is also possible in third generation networks.

Even though a connection oriented service was used in the above-described examples in the transmission of multimedia components to the wireless terminal MS, it is obvious that the present invention can also be applied when multimedia components are transmitted in a connectionless manner. Also in such an implementation, the multimedia message service centre MMSC can examine property information of the wireless terminal in the first data storage 56 and select for transmission those components which the wireless terminal MS can process. If the multimedia message contains components which the wireless terminal MS cannot process, the multimedia message service centre MMSC can advantageously transmit information about these components to the wireless terminal, wherein the wireless terminal MS can separately request these components to be transmitted.

The invention can be implemented by means of a program by making the necessary changes in the program code in the wireless terminal MS and in the multimedia message service centre MMSC. The computer program products in question can be recorded on a data carrier, for example in a memory, they can be transferred and executed e.g. in a computer or in the microprocessor of a mobile phone. Program changes which are necessary in connection with the implementation of changes in the MMI data structure, are conducted in the WAP gateway interface of the multimedia message service centre MMSC.

Fig. 3 illustrates the basic functional parts of a wireless terminal MS applying the method according to a preferred embodiment of the invention. The wireless terminal MS comprises a processor MPU and parts connected functionally to the processor: a memory MEM, a user interface UI and a radio part RF. The processor MPU is advantageously a microprocessor, a micro-controller or a digital signal processing unit (DSP, Digital Signal Processor). Advantageously, the memory MEM comprises a non-volatile memory (ROM, read only memory) and a random access memory (RAM). The radio part RF can transmit radio frequency signals, such as messages according to the WAP protocol,

and receives radio frequency signals, such as multimedia messages, via an antenna ANT. Advantageously, the user interface UI provides the user with a display and a keyboard so that it is possible to operate the wireless terminal.

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The software of the wireless terminal MS, also the software associated with implementation of the multimedia messaging service, is typically stored in the read only memory. On the basis of the software, the processor MPU controls the function of the wireless terminal MS, for example the use of the radio part RF, the presentation of the messages at the user interface UI and the reading of input received from the user interface UI. The software, which can be implemented in various ways, advantageously comprises program blocks which are responsible for implementing different procedures. These procedures include, for example, procedures associated with the presentation of multimedia components contained in the multimedia messages to the user, as well as the procedures related to the transmission and reception of messages, such as examining update request information and preparation of property information for transmission. In the wireless terminal MS, the multimedia messaging service is implemented by the processor MPU together with the software of the wireless terminal and the memory MEM. The processor MPU uses the random access memory as a temporary buffer memory when processing information.

The block diagram of Fig. 4 illustrates the functional blocks of the multimedia message service centre MMSC in relation to implementation of the present invention. The multimedia message service centre MMSC comprises a WAP gateway interface 51 via which the multimedia message service centre MMSC communicates with the WAP gateway 15. Communication with other networks outside the WAP system is conducted via an external interface 52 and communication with other multimedia message service centres is conducted via MMSC interface 53. The first data storage 56 is a database in which information on the properties of wireless terminals is recorded and stored. The second data storage 54 is a database in which multimedia messages are recorded and stored. A control unit 55 controls the function of the multimedia message service centre MMSC. Furthermore, the multimedia message service centre MMSC typically

comprises some blocks related to authentication and to the maintenance of the multimedia message service centre MMSC, which are not, however, shown in the appended Fig. 4 for the sake of clarity.

- 5 Multimedia messages addressed to a wireless terminal MS arrive at the multimedia message service centre MMSC via one of its interfaces (51—53) and they are stored in the second data storage 54. The notification message 30 transmitted to the wireless terminal MS is advantageously generated in the WAP gateway interface 51 at the
- 10 command of the control unit 55. Transmission of the notification message 30 takes place via the WAP gateway interface 51. Also, those multimedia messages or the multimedia components contained in said multimedia messages, which are retrieved from the multimedia message service centre MMSC by the wireless terminal MS, are
- 15 transmitted 33 in due course to the wireless terminal MS via the same route.

- It is obvious that the present invention is not restricted solely to the embodiments presented above, but can be modified within the scope of
- 20 the appended claims.

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Claims:

1. A method for implementing a multimedia messaging service between a wireless terminal (MS) that communicates with a communication network (12, 15, 18) over a radio path and a server (20), the method comprising the steps of:
- Receiving and storing a multimedia message addressed to the wireless terminal at the server, said multimedia message comprising at least one multimedia component,
 - Storing information on at least one property of the wireless terminal (MS) in the server,
- characterized** in that the method further comprises determining if there is any component of the multimedia message which the wireless terminal can handle according to the stored information on at least one property of the wireless terminal, wherein if there exists one or more such component(s), they are selected for transmission and transmitted to the wireless terminal.
2. The method according to claim 1, **characterized** in that the method further comprises the step of selecting at least one bearer for transmission of the selected component(s) of the multimedia message.
3. The method according to claim 2, **characterized** in that the selection of at least one bearer is performed in the wireless terminal.
4. The method according to claim 1, **characterized** in that the method further comprises the step of transmitting a notification message to the wireless terminal comprising information about at least one property of said at least one multimedia component.
5. The method according to claim 1, **characterized** in that the selection of a component of a multimedia message for transmission is performed in the server.
6. The method according to claim 1, **characterized** in that information on at least one property of the wireless terminal (MS) is changed to prevent or allow the transmission of at least one component of the multimedia message.

5 7. The method according to claim 1, **characterized** in that said information on the properties of the wireless terminal (MS) comprises information on the available storage capacity of the wireless terminal (MS)

10 8. The method according to claim 1, **characterized** in that said information on the properties of the wireless terminal (MS) comprises information on the capability of the wireless terminal (MS) to process multimedia components of a particular type.

15 9. The method according to claim 8, **characterized** in that the capability of the wireless terminal (MS) to process multimedia components is defined on the basis of the hardware properties of the wireless terminal (MS) and / or the properties of the programs installed in the wireless terminal (MS).

20 10. The method according to claim 1, **characterized** in that a maximum time of validity is defined for the information on the properties of the wireless terminal (MS) stored in said server (20).

25 11. The method according to claim 1, in which a multimedia message addressed to the wireless terminal (MS) and comprising at least one multimedia component, is received at the server (20) and a notification message (30) is transmitted to the wireless terminal (MS) to indicate that a multimedia message has arrived, **characterized** in that in the method it is examined whether information on the properties of the wireless terminal (MS) in question is stored in the server (20), wherein, if said information is not stored in the server (20), said notification message (30) is supplemented with a request (38) to update the properties of the wireless terminal (MS), wherein information on the properties of the wireless terminal (MS) is transmitted from the wireless terminal (MS) to the server (20).

35 12. The method according to claim 11, **characterized** in that in the method it is also examined whether said information on the properties of the wireless terminal stored in the server (20) is valid, wherein if said information is not valid, said notification message (30) is supplemented

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with a request (38) to update the properties of the wireless terminal (MS).

13. The method according to claim 12, **characterized** in that in the method, said property information stored in the server (20) is used as the property information of the wireless terminal (MS) if the sever does not receive a reply from the wireless terminal (MS) to said property update request.

14. The method according to claim 10, in which a connection set-up request message (40) is transmitted from the wireless terminal (MS) to set up a connection for transmission of at least one multimedia component of a multimedia message addressed to said wireless terminal (MS), **characterized** in that in the method it is examined whether said notification message (30) contains a request to update the properties of the wireless terminal (MS), wherein information on the properties of the wireless terminal (MS) is transmitted from the wireless terminal (MS) to the server (20) in said connection set-up request.

15. The method according to claim 1, **characterized** in that a WAP terminal is used as a wireless terminal (MS) and that a multimedia message service centre (MMSC) is used as a server.

16. The method according to claim 15, in which a connection set-up request (40) is transmitted from the wireless terminal (MS) to set up a connection for the transmission of at least one multimedia component of a multimedia message addressed to said wireless terminal (MS), **characterized** in that the connection set-up message (40) used is a Uaprof information transmission message according to WAP specifications, and that the header field (41) is supplemented with a profile-diff header field, if the connection set-up message is supplemented with information on the properties of the wireless terminal (MS), or the header field (41) is supplemented with a profile header field if the connection set-up message is not supplemented with information on the properties of the wireless terminal (MS).

17. The method according to claim 1, **characterized** in that those components of the multimedia message specified in the property

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information of the receiving wireless terminal (MS) stored in the multimedia messaging system are transmitted without a transmission request being transmitted from the wireless terminal (MS).

- 5 18. The method according to claim 1, **characterized** in that a transmission request is transmitted from the wireless terminal (MS) to transmit such multimedia message components which have not been specified in the property information of the receiving wireless terminal (MS) stored in the multimedia messaging system.

10

19. A system comprising at least one wireless terminal (MS), a communication network (12, 15, 18), and at least one server (20) for implementing a multimedia messaging service between the wireless terminal (MS) that communicates with the communication network (12, 15, 18) over a radio path and the server (20), the server comprising:

15

– Means for receiving a multimedia message addressed to the terminal, means for storing the multimedia message in the server, the multimedia message comprising at least one multimedia component, and

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– Means for storing information on at least one property of the wireless terminal (MS),

characterized in that the system comprises:

25

– Means for determining if there is any component of the multimedia message which the wireless terminal can handle according to the stored information on at least one property of the wireless terminal,

– Means for selecting for transmission to the wireless terminal at least one component of the multimedia message if there exists one or more such component(s), and

30

– Means for transmitting the selected component(s) to the wireless terminal.

20. The system according to claim 19, **characterized** in that the system further comprises means for selecting at least one bearer for transmission of the selected component(s) of the multimedia message.

35

21. The system according to claim 20, **characterized** in that the the wireless terminal comprises said means for selecting at least one bearer.

22. The system according to claim 19, **characterized** in that the system further comprises means for transmitting a notification message to the wireless terminal comprising information about at least one property of said at least one multimedia component.

23. The system according to claim 22, **characterized** in that the server comprises said means for transmitting a notification message.

24. The system according to claim 19, **characterized** in that it comprises means for changing information on at least one property of the wireless terminal (MS) to prevent or allow the transmission of at least one component of the multimedia message.

25. The system according to claim 19, **characterized** in that said information on the properties of the wireless terminal (MS) comprises information on the available storage capacity of the wireless terminal (MS).

26. The system according to claim 19, in which each multimedia message is formed of at least one multimedia component, **characterized** in that said information on the properties of the wireless terminal (MS) comprises information on the capability of the wireless terminal to process multimedia components of a particular type.

27. The system according to claim 26, **characterized** in that the capability of the wireless terminal (MS) to process multimedia components is specified on the basis of the hardware properties of the wireless terminal (MS) and / or on the basis of the properties of the programs stored in the wireless terminal (MS).

28. The system according to claim 19, **characterized** in that a maximum time of validity is specified for said information on the properties of the wireless terminal (MS), stored in said server (20).

29. The system according to claim 19, which comprises means (51, 52, 53) for receiving a multimedia message addressed to the wireless terminal (MS) at the server (20), the multimedia message comprising at

least one multimedia component, and means (18, 15, 12) for transmitting a notification message (30) from the server (20) to the wireless terminal (MS) to indicate that a multimedia message has arrived, **characterized** in that the system also comprises means for examining whether information on the properties of the wireless terminal is stored in the server (20), means (55) for attaching a request (38) to update the properties of the wireless terminal (MS) to said notification message (30) and means (MPU, RF, ANT) for transmitting information on the properties of the wireless terminal (MS) from the wireless terminal (MS) to the server (20).

30. The system according to claim 29, **characterized** in that it comprises means (55) for examining the validity of said property information of the wireless terminal (MS) stored in the server (20), and means (55) for attaching a request (38) to update the properties of the wireless terminal (MS) to said notification message (30).

31. The system according to claim 30, **characterized** in that said property information stored in the server (20) is arranged to be used as the property information of the wireless terminal (MS) if the server (20) has not received a reply from the wireless terminal (MS) to said property update request (38).

32. The system according to claim 29, in which the wireless terminal comprises means (MPU, RF, ANT) for transmitting a connection set-up request (40) from the wireless terminal (MS) to the server (20) to set up a connection for transmission of at least one multimedia component of a multimedia message addressed to said wireless terminal (MS) **characterized** in that the system also comprises means for examining whether said notification message (30) contains a request to update the properties of the wireless terminal (MS), and means (MPU, RF, ANT) for transmitting the property information of the wireless terminal (MS) to the server (20) in said connection set-up request message (40).

33. The system according to claim 19, **characterized** in that the wireless terminal (MS) is a WAP terminal and that the server is a multimedia message service centre (MMSC).

34. The system according to claim 33, in which the wireless terminal (MS) comprises means (MPU, RF, ANT) for transmitting a connection set-up request (40) from the wireless terminal (MS) to the server (20) to set up a connection for transmission of at least one multimedia component of a multimedia message addressed to said wireless terminal (MS) **characterized** in that the connection set-up request (40) is a Uaprof information transmission message according to WAP specifications, and that the header field (41) is supplemented with a profile-diff header field, if the connection set-up request is supplemented with information on the properties of the wireless terminal (MS), or a profile header field if the connection set-up message is not supplemented with information on the properties of the wireless terminal (MS).
35. A server (20) for implementing a multimedia messaging service between a wireless terminal (MS) that communicates with a communication network (12, 15, 18) over a radio path, the server comprising:
- Means for receiving a multimedia message addressed to the terminal, means for storing the multimedia message in the server, the multimedia message comprising at least one multimedia component, and
 - Means for storing information on at least one property of the wireless terminal (MS),
- characterized** in that the server further comprises:
- Means for determining if there is any component of the multimedia message which the wireless terminal can handle according to the stored information on at least one property of the wireless terminal, and
 - Means for selecting for transmission to the wireless terminal at least one component of the multimedia message if there exists one or more such component(s).
36. The server according to claim 35, **characterized** in that it comprises means for forming a notification message for transmission to the wireless terminal comprising information about at least one property of said at least one multimedia component.

37. The server according to claim 35, **characterized** in that it comprises means for changing information on at least one property of the wireless terminal (MS) to prevent or allow the transmission of at least one component of the multimedia message.

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38. The server (20) according to claim 35, **characterized** in that a maximum time of validity is specified for said information on at least one property of the wireless terminal (MS) stored in said server (20).

10 39. The server (20) according to claim 35, which comprises means (51, 52, 53) for receiving a multimedia message addressed to the wireless terminal (MS), which multimedia message comprises at least one multimedia component, and means (18, 15, 12) for forming a notification message (30) for transmission to the wireless terminal (MS)
15 to indicate that a multimedia message has arrived, **characterized** in that the server (20) also comprises means to examine whether information on the properties of the wireless terminal (MS) in question is stored in the server (20), means (55) for attaching a request (38) to update the properties of the wireless terminal (MS) to said notification message (30), and means (MPU, RF, ANT) for receiving information on the properties of the wireless terminal (MS) at the server (20).
20

40. The server (20) according to claim 39, **characterized** in that it comprises means (55) for examining the validity of said property
25 information of the wireless terminal (MS) stored in said server (20), and means (55) for attaching a request to update the properties of the wireless terminal (MS) to said notification message (30).

41. The server (20) according to claim 40, **characterized** in that said
30 property information stored in the server (20) is arranged to be used as the property information of the wireless terminal (MS) if the server (20) has not received a reply from the wireless terminal (MS) to said property update request (38).

42. The server (20) according to claim 35, **characterized** in that it is a
35 multimedia message service centre (MMSC).

43. A wireless terminal (MS) to be used in a multimedia messaging system that comprises a communication network (12, 15, 18), and at least one server (20) for implementing a multimedia messaging service between the wireless terminal (MS) that communicates with the communication network (12, 15, 18) over a radio path and the server (20), the server comprising:

- Means for receiving a multimedia message addressed to the terminal, means for storing the multimedia message in the server, the multimedia message comprising at least one multimedia component, and
- Means for storing information on at least one property of the wireless terminal (MS),

characterized in that the wireless terminal comprises means for requesting a component of the multimedia message to be transmitted to the wireless terminal without identifying the component.

44. The wireless terminal (MS) according to claim 43, **characterized** in that it comprises said means for selecting at least one bearer for transmission of at least one component of the multimedia message.

45. The wireless terminal (MS) according to claim 43, **characterized** in that it further comprises means for receiving a notification message comprising information about at least one property of said at least one multimedia component.

46. The wireless terminal according to claim 43, **characterized** in that it comprises means for changing information on at least one property of the wireless terminal (MS) to prevent or allow the transmission of at least one component of the multimedia message.

47. The wireless terminal (MS) according to claim 43, **characterized** in that said information on the properties of the wireless terminal (MS) comprises information on the available storage capacity available of the wireless terminal (MS).

48. The wireless terminal (MS) according to claim 43 to 47, **characterized** in that said information on the properties of the wireless

terminal (MS) comprises information on the capability of the wireless terminal to process multimedia components of a particular type.

5 49. The wireless terminal (MS) according to claim 48, **characterized** in that the capability of the wireless terminal (MS) to process multimedia components is specified on the basis of the hardware properties of the wireless terminal (MS) and / or on the basis of the properties of the programs installed in the wireless terminal (MS).

10 50. The wireless terminal (MS) according to claim 28 which comprises means (18, 15, 12) for receiving a notification message (30) transmitted from the server (20), which notification message (30) is transmitted to the wireless terminal (MS) to indicate that a multimedia message has arrived, **characterized** in that the wireless terminal (MS) also
15 comprises means (55) for examining a request (38) to update the properties of the wireless terminal (MS) from said notification message (30), and means (MPU, RF, ANT) for transmitting information on the properties of the wireless terminal (MS) from the wireless terminal (MS) to the server (20).

20 51. The wireless terminal (MS) according to claim 28, **characterized** in that the wireless terminal (MS) is a WAP terminal.

25 52. The wireless terminal (MS) according to claim 51, which comprises means (MPU, RF, ANT) for transmitting a connection set-up request (40) from the wireless terminal (MS) to the server (20) to set up a connection for the transmission of at least one multimedia component of a multimedia message addressed to said wireless terminal (MS) **characterized** in that the connection set-up request (40) is a Uaprof
30 information transmission message according to WAP specifications, and that the header field (41) is supplemented with a profile-diff header field, if the connection set-up request is supplemented with information on the properties of the wireless terminal (MS), or a profile header field if the connection set-up message is not supplemented with information
35 on the properties of the wireless terminal (MS).

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Abstract:

The invention relates to a method for implementing a multimedia messaging service between a wireless terminal (MS) that communicates with a communication network (12, 15, 18) over a radio path and a server (20). The method comprising the steps of receiving and storing a multimedia message addressed to the wireless terminal at the server, the multimedia message comprising at least one multimedia component, and storing information on at least one property of the wireless terminal (MS) in the server. The method further comprises determining if there is any component of the multimedia message, which the wireless terminal can handle according to the stored information on at least one property of the wireless terminal. If there exists one or more such component(s), they are selected for transmission and transmitted to the wireless terminal.

Fig. 4

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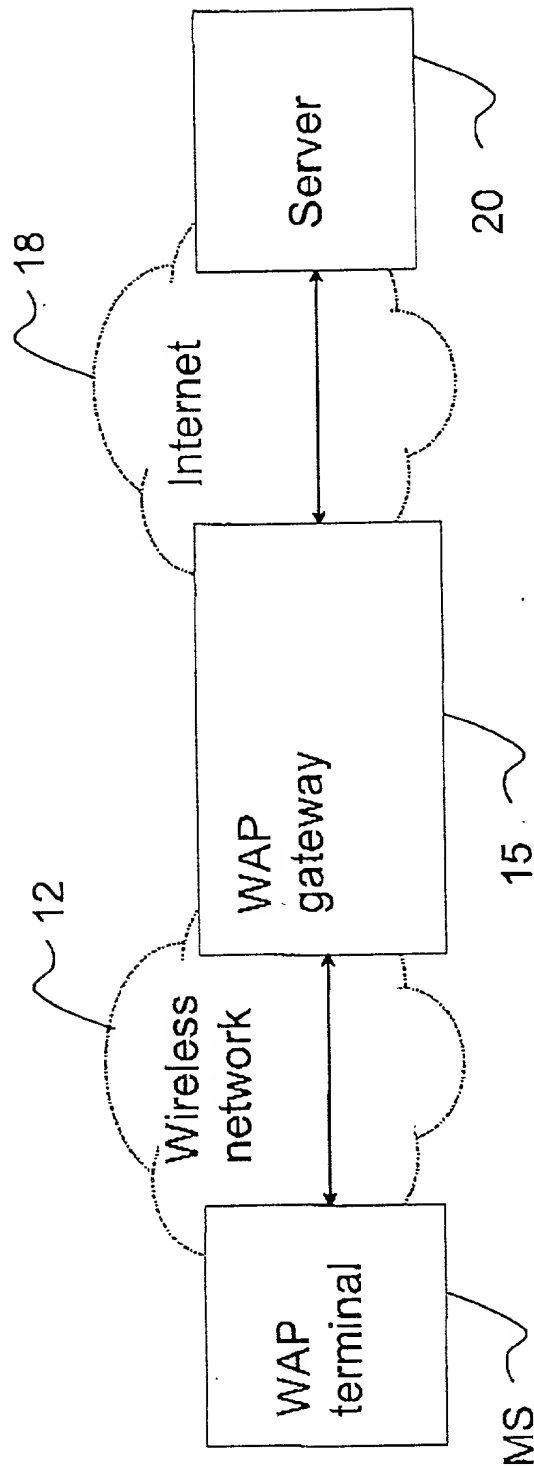


Fig. 1
PRIOR ART

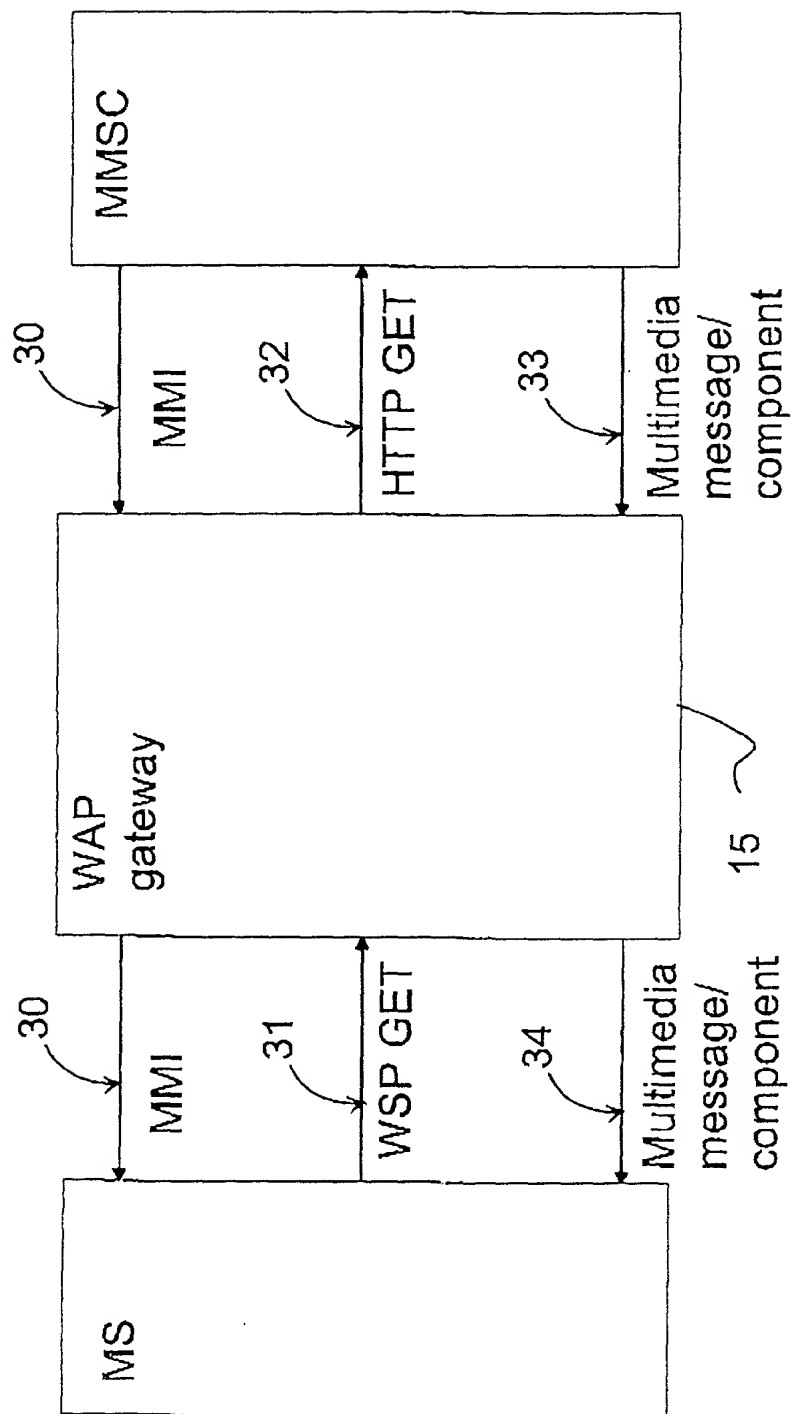


Fig. 2

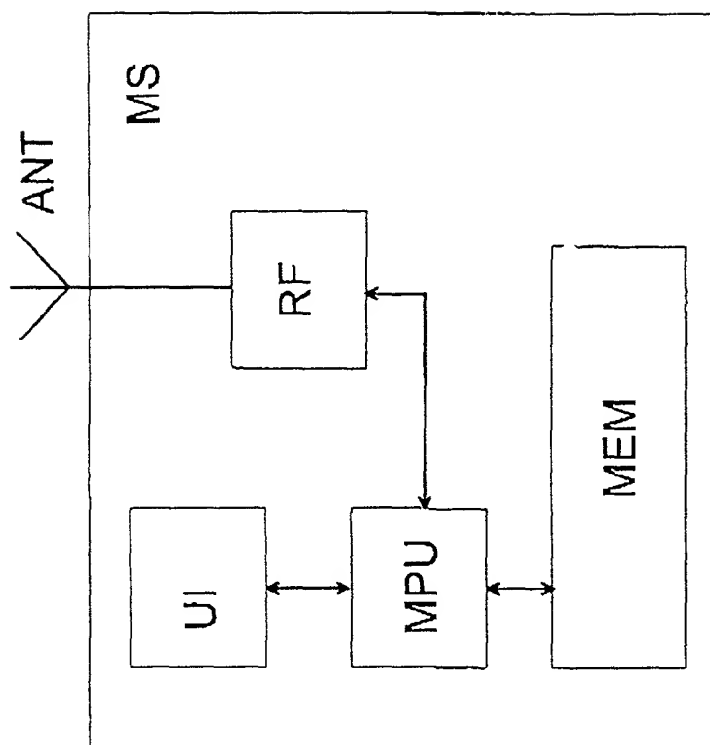


Fig. 3

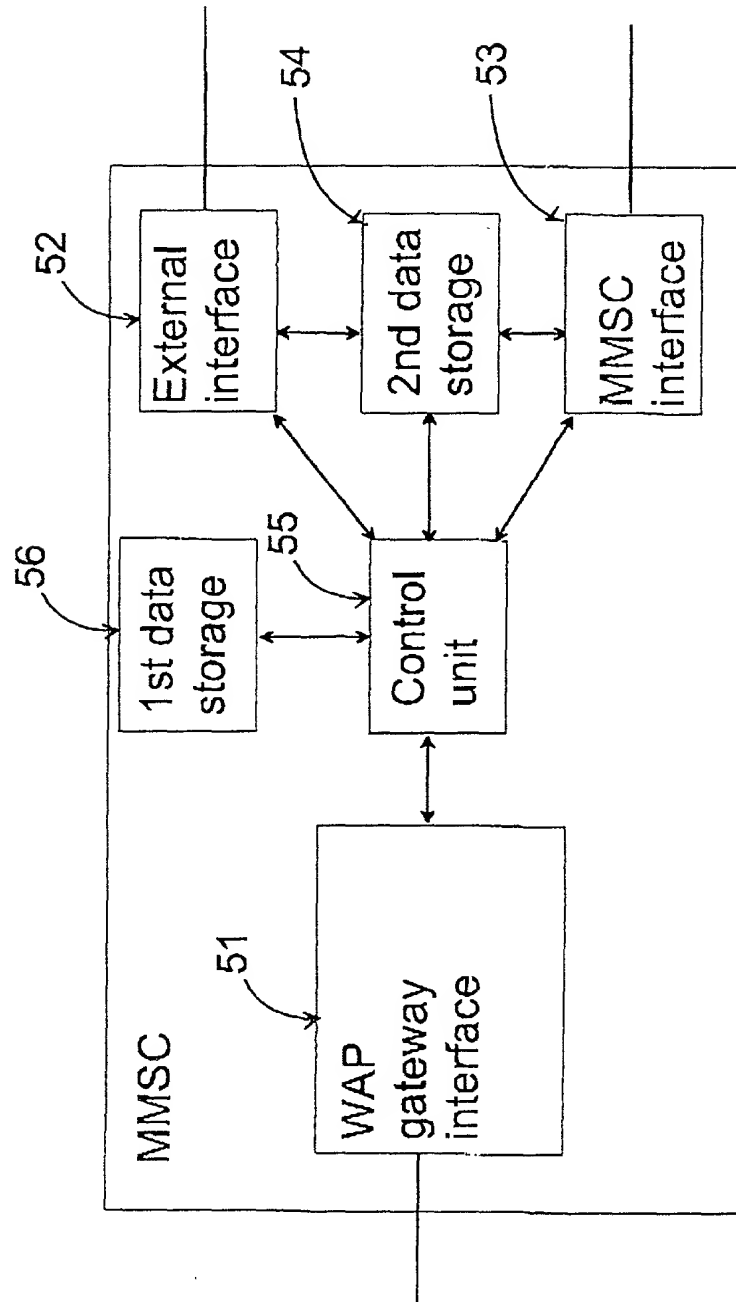


Fig. 4

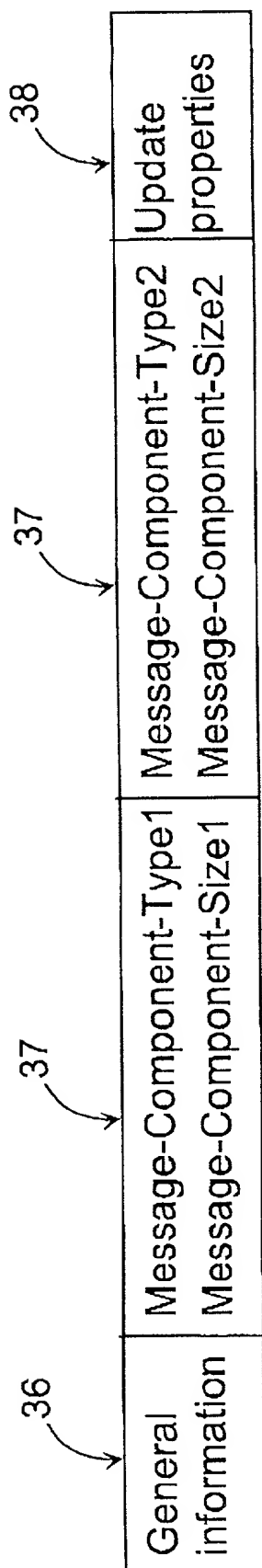


Fig. 5a

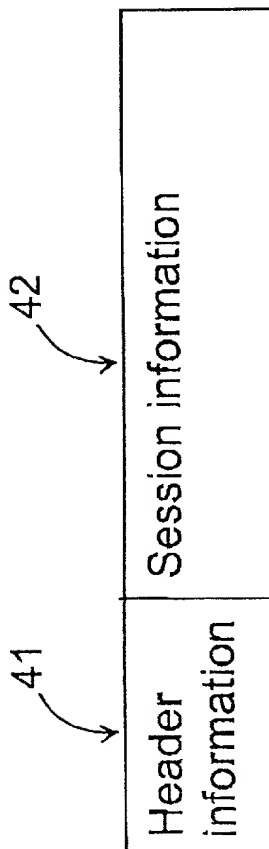


Fig. 5b

Attorney's Docket No. _____

PATENT

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL,
DIVISIONAL, CONTINUATION OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)☒ original.☐ design.☐ supplemental.

NOTE: *If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.*

☐ national stage of PCT.

NOTE: *If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.*

☐ divisional.☐ continuation.☐ continuation-in-part (C-I-P).**INVENTORSHIP IDENTIFICATION**

WARNING: *If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

A method for implementing a multimedia messaging service, a multimedia messaging system, a server of a multimedia messaging system and a multimedia terminal

SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b), or (c))

(a) ☒ is attached hereto

(b) ☐ was filed on _____ as ☐ Serial No. 0/ _____
 or ☐ Express Mail No., As Serial No. not yet known _____
 and was amended on _____ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

(c) ☐ was described and claimed in PCT International Application No. _____, filed on _____ and as amended under PCT Article 19 on _____ (if any).

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(also check the following items, if desired)

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

PRIORITY CLAIM (35 U.S.C § 119(a)-(d))

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) ☐ no such applications have been filed.(e) ☒ such applications have been filed as follows.

NOTE: where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
Finland	19992401	5 November 1999	<input checked="" type="checkbox"/> YES NO <input type="checkbox"/>
Finland	19992775	23 December 1999	<input checked="" type="checkbox"/> YES NO <input type="checkbox"/>
			<input type="checkbox"/> YES NO <input type="checkbox"/>
			<input type="checkbox"/> YES NO <input type="checkbox"/>
			<input type="checkbox"/> YES NO <input type="checkbox"/>

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

_____ / _____	_____
_____ / _____	_____
_____ / _____	_____
_____ / _____	_____

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached
ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY
FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P)
APPLICATION

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

NOTE: *If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.*

POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

(list name and registration number)

Clarence A. Green (24,622)
Harry F. Smith (32,493)
Mark F. Harrington (31,686)

(check the following item, if applicable)

☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO

Clarence A. Green
Perman & Green, LLP
425 Post Road
Fairfield, CT 06430

DIRECT TELEPHONE CALLS TO:

(Name and telephone number)
Clarence A. Green
(203) 250-1800

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

Full name of sole or first inventor

Outi

Aho

(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

FAMILY (OR LAST NAME)

Inventor's signature

Outi Aho

Date

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Residence

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(GIVEN NAME)

(MIDDLE INITIAL OR NAME)

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Residence

Post Office Address

Full name of third joint inventor, if any

(GIVEN NAME)

MIDDLE INITIAL OR NAME

FAMILY (OR LAST NAME)

Inventor's signature

Date

Country of Citizenship

Residence

Post Office Address

03/11 '00 16:54 FAX 03 2886262

(check proper box(es) for any of the following added page(s)
that form a part of this declaration)

☐ Signature for fourth and subsequent joint inventors. Number of pages added _____

* * *

☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added _____

* * *

☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added _____

* * *

☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

* * *

☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added _____

* * *

☐ Authorization of attorney(s) to accept and follow instructions from representative.

* * *

(if no further pages form a part of this Declaration,
then end this Declaration with this page and check the following item)

☒ This declaration ends with this page.